It's tough to figure out what "craft" really is. Some argue that the core of craft lies in utility; that craft is distinguished by usefulness. That's an efficient definition, but it has the unfortunate effect of denying that many kinds of objects, from silver table centerpieces to contemporary sculpture in clay and glass, are not craft. As an alternative, one could propose that craft is identified by traditional mediums: metal, clay, fibers, wood, glass... except that plastics, stone, found objects, and dozens of other materials have been used to make craft objects. So this definition is incomplete, too. Nonetheless, there remains one basic, absolutely necessary component of any craft object - it must be made substantially by hand.

Of course, we have become accustomed to the idea that handcraft can include some mechanical assistance. What the exact proportion should be is a subject of debate, but most people agree that a craft object is made largely by hand, in a small studio setting, and in fairly modest numbers. Studio crafts are clearly distinct from objects made by machines, or in large numbers in factory settings. On the "art" side of the field, craft objects cannot be dissolved into pure thought the way conceptual art can. Crafts must remain hand-made things, more or less. If it doesn't have the imprint of the hand on it, the thing ceases to be craft in any meaningful sense.

Given the centrality of hand fabrication to craft, there's remarkably little literature on the hand and handwork. David Pye's The Nature of Art and Workmanship remains the most important text about handwork, and that was first published in 1968. In the intervening 32 years, very little has appeared to further examine handwork. And yet, the new century seems to bring an atmosphere of crisis to the crafts: how, under the double onslaught of consumer culture and new technologies, does one justify any craft practice? Even craft insiders, from Stanley Lechtzin[1] to Garth Clark[2], question the need for handwork. It's problematic, and it all comes down to one crucial question:

Why bother to make anything by hand today?

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[1]Stanley Lechtzin with Michael Dunas, "Conversations on Technology", Metalsmith, Volume 8, Number 3, Summer 1988.

[2]Suzanne Ramljak, "Impresario of Clay", American Ceramics Volume 13, Number 2. In this interview, Clark astutely questions the relevance of the Arts & Crafts movement, and the value of hand fabrication.

Why bother when cutting-edge technology is moving towards the complete automation of manufacturing? Why bother when you can buy so many inexpensive and efficient things that function so well? Why bother with all this messy, laborious, and highly demanding work? Isn't it stupidly nostalgic and obsolete, or nearly so? Shouldn't we let handwork die a quiet death, and get on with our 21st century lives without looking back?

To answer this question, I'll start with the hand itself. Most of us have two of them, and generally we take them for granted. But they are quite marvelous instruments. The hand doesn't really end at the wrist, because it is connected to a network of tendons, muscles and bones that extend all the way to the spine. The hand also contains a dense array of nerve endings, which are routed to the spinal chord and then to many different areas of the brain.

Each hand is attached to an arm. Our present arm structure started evolving among tree-dwelling anthropoids, more than 25 million years ago. It's thought that one of the arm's primary functions was to support and move the primate's full body weight while it hanged suspended from a branch. At the same time, the hand had to gather fruit, hold infants, and presumably ward off attackers. It's this ability to hang suspended - called brachiation - that gives our shoulders such flexibility. As a result, the arm is highly mobile, moving each hand throughout most of a sphere centered at the shoulder. The arm is also powerful, allowing hands to bear a considerable load.

Early primates had paws in a five-rayed structure, as they do now. Over a period of time, nails replaced claws, and the surfaces of the palm developed sensitive ridged pads for grasping and climbing around in trees. During this arboreal existence, anthropoids also became larger and more aggressive, as evidenced by fossil skeletons and tooth structures. It's thought that our ancestors descended from trees and adopted a bipedal posture between 4 and 5 million years ago, presumably on the African savannah. The new upright posture had one profound effect: it freed the hands for other uses than locomotion and supporting body weight. At this point, brachiation turned out to allow a new skill: the overhand throw. It's this throw, coupled with tool manufacture, that made early hominids such dangerous predators.

The fossil record for savannah-dwelling apes is very spotty, but it's thought that a number of evolutionary changes occurred. As the hand was devoted to new, more complex tasks, brain capacity increased. Since a number of apes presently use tools, as well as hunt, forage, and defend territories in groups, the savannah apes probably did, too. Somewhere along the line, the making of polyliths - artifacts that have several parts attached to each other - appeared. It's thought that the first polyliths may have been stone axes, and that tool making occurred

in groups and involved communication. So it is now theorized that hand use, language use, and cognition all evolved interdependently. You can regard the hand as an instrument of language, and an extension of the brain. Each one probably influenced the other, and each became part of our unique biological nature.

The idea of a biological human nature is controversial. It's an unpopular idea among those who are convinced that there is no innate human nature outside of our physical characteristics, and that our brain is essentially a blank slate at birth, to be filled up by culture and language. This theory has been called "environmentalism", and its champions have included Franz Boas, Margaret Mead, and B.F. Skinner. It has a long history, and it's probably wrong. Volumes of research done in the past fifty years point directly toward a pan-cultural human nature, and that much human behavior is profoundly influenced (but not determined) by inherited structures in the mind.

The idea of the human brain's innate abilities was first documented in 1861, when a French doctor named Paul Broca showed that loss of brain tissue in a small area of the left cerebral cortex caused what is called motor aphasia. Specifically, speech and writing are impaired, while comprehension remains normal. In 1874, a German medical student named Karl Wernicke showed that damage in another small area of the left hemisphere produced a sensory aphasia, in which speech is reduced to gibberish and language comprehension is lost. These two parts of the brain are now known as Broca's area and Wernicke's area, and human language is generally seen as dependent on neural activity in these two parts of the brain.

In the past 125 years, research has shown that the ability to learn language is genetic - hard-wired in the brain , so to speak. In fact, neurobiologists have demonstrated that the human brain is divided into a number of regions with specific cognitive functions. The biological evidence shows that human intelligence is divided into relatively discrete capacities, as if the brain consisted of a number of different computers, each assigned to a specific task. Presumably, each module evolved by Darwinian natural selection in response to a particular feature of environment or culture, like bipedalism on grasslands, tool use, or group communication. The most rigorous proof comes from hundreds of studies of brain damage and corresponding losses of specific abilities, similar to those studied by Broca and Wernicke. Other research suggests that innate properties of the human brain are quite extensive, including different strategies for reproduction in males and females, a taste for sweets and

fats, and a sense that facial symmetry is more beautiful than asymmetry.[3] As a field, the study of our genetic human nature is called evolutionary biology, and it is starting to provide useful evidence in support the practice of modern crafts.

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But I digress. The subject here is hands. At the end of the arm, the human hand rotates more than 270 degrees, from the familiar "thumbs down" position to a palm-upward position. The hand flips up and down about 150 degrees: this is the motion of waving good-bye. The hand also rocks from side-to-side, perpendicular to the waving motion. All this flexibility allows the palm to face in almost any direction, and to grasp a stick and orient it along the axis of the arm, which in turn permits the motion of hammering and clubbing. The wrist joint is also able to absorb the shock of repeated blows, which is a good thing for silversmiths.

The most significant feature of the human hand is the fully opposable thumb. The fossil evidence suggests that the thumb evolved over the past two million years as early hominids used stone tools, in a case of co-evolution of culture and biology. Our thumbs are longer, stronger, and more flexible than any other primate's. The thumb swivels from a fully open position toward the base of the little finger, and it also folds toward the index finger. The tips of all four fingers can touch the thumb, and the third and fourth fingers can also fold at an angle, so they touch the base of the thumb. These abilities are unique to the human hand. All this flexibility combines with strong muscles at the base of the thumb and the upper arm to make it a highly effective gripping tool.

We have at least four major grips. First, there is the pinch grip, with the thumb pressed against the side of the index finger. (You might think of this as the tiddlywink grip.) There's the "precision" grip, with the end of the thumb and one or more fingers encircling a small object for maximum control. This is how people normally hold small projectiles, like a rock or a baseball. Then, there's the "oblique squeeze grip", similar to the pinch grip, but which is used to hold a shaft when you need accuracy. This is how a jeweler holds a chasing hammer:

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[3]For a summary of recent ideas about the biological human nature, I suggest Donald Brown's Human Universals, McGraw-Hill, 1991. Also see Matt Ridley, The Origins of Virtue: human instinsts and the evolution of cooperation, Penguin Books, 1996 and William Wright, Born that way: genes, behavior, personality, Knopf, 1998

it combines the power of the arm with a good aim for directing a blow. And finally there's a power grip, with the thumb wrapped around the shaft of a tool. This is how athletes hold a baseball bat or a javelin, and the full force of the thumb can be applied in this position. Think of some guy with an over-enthusiastic handshake: it can be quite painful.

Since we have two hands, it makes sense that one hand should be used as a vise, and the other as a tool holder. In most cases in which one hand is dominant, it turns out that the secondary hand anticipates what the primary hand is doing, the way we change the position of a piece of paper while we write. So it appears that the two hands have evolved to be cooperative, but specialized, and this trait is also unique to humans.

This is a brief summary of the mechanics of hands, but it's only half the story[4]. The hand is equipped throughout with feedback sensors. We have nerve receptors for heat, cold, pain and pressure, which together allows us to perceive hardness, compliance, texture, temperature, and weight, among other things. The hand is also proprioceptive, like the rest of the body, which means that sensors in muscles, joints, tendons and skin provide information about position.

All these sensory nerves, along with those that control muscles, are connected to the brain. The way the brain controls the hand is quite remarkable. First, motion is a matter of flexion and extension of paired muscle groups, which always work in complementary states of contraction. One muscle pulls, but the other muscle also pulls back at the same time, providing just enough resistance to make the action smooth and to stop motion at the desired position. Of course, this coordination is done without our conscious awareness, and usually involves more than one muscle group at a time.

Imagine somebody unexpectedly throws a ball you: instinctively most people will bring both arms forward and cup their hands at roughly the place where the ball will arrive. In a split second, you'll calculate the curved path of the projectile, move your arms, and rotate your hands so the palms face the point of impact. You also might shift balance, or step forward or back - all this without reflection. This is possible because information gathered by the eyes and in your body are closely coordinated in your occipital and temporal cortex, along with the anterior cerebellum. In fact, the hand is a privileged part of the body. It is represented by

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[4]For a much more complete description of the physiology of hands, see Frank R. Wilson's The Hand: how its use shapes the brain, language, and human culture, Pantheon Books, 1998.

about 15% of both the sensory and the motor cortex of the brain, although the hand occupies a far smaller proportion of the total surface area of the body. Recognition by touch is also represented within the parietal association cortex. Thus the hand appears to eat up a substantial proportion of our sensory and computational powers. In addition, humans have a finely tuned internal clock, which makes catching a ball possible because it predicts when it will strike the hand. (Of course, if you're like me, your internal clock is a little funky and you'll drop the ball.) A simple action like catching a projectile requires perception, calculation, anticipation, and motion: I know of no robot in the world can perform this task. So, imagine what it takes to raise a silver teapot, or plane a table top: these complex procedures demand years of training, a high degree of skill, and hours of labor.

The hand demands a close coordination between many different aspects of perception, cognition, and movement. It's all seamless; without distinction between mind and body. And this seamlessness appears to replicate the way the human organism evolved, as well as the human infant develops. Brain modules, speech, and the physical layout of the body evolved simultaneously, and mature simultaneously. As Frank R. Wilson puts it:

> "...the hand speaks to the brain as surely as the brain speaks to the hand. Self-generated movement is the foundation of thought and willed action, the underlying mechanism by which the physical and psychological coordinates of the self come into being. For humans, the hand has a special role and status in the organization of movement and in the evolution of human cognition.[5]"

Recent theories about divisions of functions in the human brain offer a useful explanation for the hand's special status. Howard Gardner, a professor at Harvard University, has proposed that the human brain encompasses at least six discrete types of intelligence. While the categories themselves are fictions, they denote real properties of the brain. Linguistic intelligence and logical/mathematical intelligence are the capacities measured by IQ tests and the like, and almost exclusively form the Western conception of mental power. But Gardner further proposes musical intelligence, spatial intelligence, personal intelligence (which governs social and introspective skills), and bodily-kinesthetic intelligence. He also proposes that all these distinct intelligences are equal, as all of them are equally rooted in brain structure and function. It's an interesting view, because Gardner would revise the standard hierarchy of mind over body, and thought over physical labor. In the end, he's undermining classical Western metaphysics.

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[5]Wilson, page 291.

The evidence for bodily-kinesthetic intelligence is founded, again, in the study of brain-damaged individuals. To support his separation of bodily intelligence from other types of cognition, Gardner cites various motor-control disorders caused by selective left-hemisphere injuries. Brain-damaged individuals have shown impairment of the ability to dress, to carry out verbal commands, or to sequentially execute certain directions, in spite of their being in good physical condition and in spite of having understood the directions. In general, these disabilities are known as *apraxias*, marked by an absence of dexterity. Gardner also cites examples of severely autistic children who show extraordinary motor control or a gifted understanding of mechanical principles.

Gardner says bodily intelligence is marked by:

> "...the ability to use one's body in highly differentiated and skilled ways, for expressive as well as goal-directed purposes... Characteristic as well is the capacity to work skillfully with objects, both those that involve the fine motor movements of one's fingers and hands and those that exploit gross motor movements of the body.[6]"

Bodily-kinesthetic intelligence is manifested in the skill of the athlete, the dancer, the mime – and the craftsperson. All crafts demand exceptional motor control, from the rapid dexterity demanded by glassblowing to the subtle coordination required in weaving. Bodily intelligence can thus be seen as a biological and cognitive foundation to all craft practice.

The various intelligences that Gardner proposes are genetically determined - that is to say, inherited - but unevenly distributed throughout the population. Different people will have different mixes of intelligences, and I think this fact explains a great deal about why certain people are drawn to handwork. Every craft teacher is familiar with the pattern of students taking an introductory studio course. A few might have some experience with crafts, but for most students the medium and processes are completely unfamiliar. The majority suffer through the course, get an adequate grade at the end of the semester, and never return. But an occasional student - maybe one in thirty, or one in forty - undergoes a transformation. Like everyone else, she puts her hands on the material, she pushes it around, she gets a product. But unlike the majority, she recognizes something in the business of putting her

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[6]Howard Gardner, Frames of Mind: The Theory of Multiple Inteligences, Basic Books, 1985, Page 206.

hands on a material and manipulating it. She awakens; a light goes on. And suddenly she's motivated, she's hungry for more. She takes the next course, and the next. Maybe she switches her major. And just maybe she changes her life, and starts down the road to becoming a woodworker, a glassblower, a potter, or a jeweler.

What happens is this: a person who has a strong bodily-kinesthetic intelligence tuned to fine motor skills, and good spatial intelligence, will feel very comfortable working with her hands. The student discovers that the work - the physical labor - conforms to a pre-existing complex of latent abilities, and her innate mix of intelligences finally finds a means of expression. Many of these new converts never knew they had such a gift, because their education never provided an opportunity to work with their hands. (Of course, this poverty of experience is an indictment of the state of public education. As usual, verbal and mathematical intelligence get all the attention, and all the others get little or nothing.)

Bodily-kinesthetic intelligence seems to be much more finely divided than even Gardner imagines. Anyone who has taught in a craft department recognizes that students intuitively gravitate to different mediums. When I taught at Kent State University, we once had identical twins enter the art school. Most people couldn't tell the two apart, and they were inseparable at first. They took a wide range of introductory courses together, but one settled in ceramics and the other in jewelry. The clay major couldn't stand the stiffness and resistance of metal, and the jewelry major couldn't stand the mud. I can't imagine those aversions were learned; they seemed completely intuitive. In the craft world, it's widely known that there are clay people, glass people, fibers people, and metals people. Even within mediums, there is room for different sensibilities: there are jewelers and silversmiths and blacksmiths; there are throwers and hand builders; there are hot glass and cold glass people. Each person is responding to some innate predisposition for a particular material, and a particular way of working it. While I doubt there is one gene for weavers and another for basketmakers, I suspect that each different way of working conforms to a complicated blend of mental modules that varies widely from one individual to the next.

There's also a powerful emotional charge that come with finding one's work. As one of the subjects of Frank Wilson's book puts it, finding her true vocation "opened the closed box in my soul that I never knew I had.[7]" I can bear witness to that feeling. In 1970 I was a lost boy, a typical hippie rebel without a cause. I grew my hair long; I was doing lots of mind-altering drugs; I was having all sorts of friction with my dad. In college, I was becoming more and

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[7]Wilson, Page 251

more disengaged from my studies, because the courses seemed utterly irrelevant to my interests and desires. At the same time, I didn't have the foggiest idea what I really wanted to do. My friends would say, "You need to find yourself", but would offer no advice how to accomplish such a thing. That summer, I departed in my Chevy van for California, never expecting to return.

Well, as things turned out, I did return, and I went back to college that fall for a final try. For no good reason, I signed up for jewelry classes, and it changed my life. Suddenly I found an adult activity that was completely satisfying and engaging, challenging and comprehensive. Pretty much by accident, I found my true vocation. All I wanted to do was work in the jewelry studio: I felt like I had found a home. The experience gave me a motivation that has lasted thirty years. That's strong stuff, and it had everything to do with using my hands. I found a discipline that allowed my own mix of intelligences, bodily and otherwise, to bloom and prosper. And I think every craftsman and woman has had a similar experience.

The excitement of awakening to one's own gifts is nothing more than an introduction, the first chapter to a long, long book. All students of craft undergo a period of training and practice. There's so much to learn, and so many skills to perfect. It turns out that becoming skillful actually changes the brain. Think of a violinist playing scales: the idea is to make the operation so familiar that it can be performed flawlessly, without thinking. This is not a simple operation: like catching a ball, it involves activating many different muscles in a very precise sequence. Playing scales also involves a feedback loop: the musician listens to each note to make sure it is on key, and corrects as required. After some time, it becomes automatic. In fact, neural pathways in the brain are altered with constant practice. Inside the brain, learning a series of movements consists of groups of neuron firing in a certain sequence. As learning progresses, this circuit can be made to fire with less effort, which means that the movements are performed faster and more easily. Research also shows that neuronal firing in other parts of the brain simultaneously decreases, so practice makes the brain more efficient in two different ways.[8]

Sometimes an innate gift can eliminate some of the frustration of slow learning. For instance, I learned to raise sheet metal into vessel forms quite easily. I couldn't explain it, but the hammering seemed natural to me. On the other hand: my gift is limited. I'm no damn good at throwing clay or blowing glass: I simply don't comprehend materials that droop.

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[8] Thanks to Dr. Gerald A. Rosen of Philadelphia for this information.

Anybody who has endured an apprenticeship to a craft knows that high-level craftwork is built on a foundation of dedication, self-discipline, and patience. There will be plenty of failures and adjustments before one gains an adequate level of skill, and mastering some techniques takes years, even decades. It requires motivation to complete the training, and motivation is located strictly in the realm of emotion.

I believe that it's the emotions associated with labor that sustain craftspeople. The psychologist Mihaly Csikszentmihalyi (pronounced "cheek-sent-me-high") offers a number of insights about the nature of satisfying action, all of which pertain to handwork. He describes a type of pleasurable action that he calls "flow". Activities that induce flow have clear goals, they are challenging but not impossible to complete, they provide immediate feedback, and they are characterized by a deep state of concentration that is set apart from everyday experience. Csikszentmihalyi says, "The combination of all these elements causes a deep sense of enjoyment that is so rewarding people feel that expending a great deal of energy is worthwhile simply to be able to feel it."[9] In other words, the secret of contentment is absorbed work.

Csikszentmihalyi starts his analysis by saying that most "flow" states require actions bounded by rules, and that demand skill. The activity can't be so simple as to become boring, nor so complex as to result in failure, frustration, or anxiety. The skill - earned only through practice and training - ensures that the individual has the tools needed to rise to the challenge. Of course, the threshold of boredom will rise as a person becomes more skilled, so flow requires complexity that increases correspondingly. Csikszentmihalyi is adamant that reaching the flow state demands skill. He says:

> "Although the flow experience appears to be effortless, it is far from being so. It often requires strenuous physical exertion, or highly disciplined mental activity. It does not happen without the application of skilled performance."[10]

When I read that passage, I underlined it and drew two exclamation points in the margin. As much as anything, he was talking about skilled handwork.

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[9] Mihaly Csikszentmihalyi, Flow: the psychology of optimaol experience, Harper Pereinnial, 1991, page 49.

[10] ibid, page 54.

The clear goals, rules, and immediate feedback that Csikszentmihalyi cited are the psychological foundations of craft. The goals of craft are obvious: making an object. The rules of craft are the technical processes, which set clear parameters about how an object may or may not be made. As for immediate feedback, some crafts offers quick results, the way throwing on the potter's wheel can produce a form in a matter of minutes. Most crafts are slow, but they all have their own rhythms. These patterns serve to mark out progress towards completion, and offer the direct feedback Csikszentmihalyi mentions. The silversmith completes a round of hammer blows; a complete set of rounds adds up to a single course, which is then punctuated with bouging and annealing. An experienced smith will note the success of each strike of the hammer, each round, each course, and feel a measure of satisfaction in every one. Every experienced craftsman knows how his craft can be broken down into parts, and he knows the pleasure of slow but steady work.

The importance of emotion to craft - the way people feel about their chosen work - cannot be underestimated. When people call themselves weavers, potters, jewelers, or enamelists, they're not just talking about material and techniques. They are identifying themselves: the words point to an emotional bond between the person and the work. Serious craftspeople don't just manipulate threads on a loom, or turn boards into chairs: he *is* a weaver; she *is* a woodworker. This loyalty to medium is one of the defining characteristics of craft.

Frank Wilson, who wrote *The Hand*, was provoked into writing his book only after he witnessed the power of the emotion that accompanies skilled work. As a neurologist and amateur pianist, he conducted workshops for professional musicians, and one of the things he did was show videotapes of injured musicians struggling to play their instruments. The first time he showed the tape, a guitarist in the audience fainted. In fact, this happened on several different occasions.

Wilson writes in his prologue:

> "I now understand that I failed to appreciate how the commitment to a career in music differs from even the most serious amateur interest. Although I had worked very hard as a beginning piano student, took the work seriously and spent a great deal of time at it, it was not my *life*. Consequently, I did not anticipate the profound empathy for the injured musicians that would be felt by some viewers of these films. Moreover... when personal desire prompts anyone to learn to do something well with their hands, an extremely complicated process is initiated that endows the work with a powerful

> emotional charge. People are changed, significantly and irreversibly it seems, when movement, thought, and feeling fuse during the long-term pursuit of personal goals."[11]

Wilson could just as easily have been writing about craftspeople. The subjective experience is the same. When craft is practiced at a high level - when a person discovers that handwork conforms to their own set of capabilities and intelligences, when that person finds a motivation strong enough to carry her through the difficult years of practice and apprenticeship, when her work regularly induces the flow state of mind, and when she finally develops a powerful identification with her work - the only word adequate to the emotion is passion.

I'm absolutely convinced that emotional engagement is essential to every studio craftsperson. Nobody's getting rich at this business, so it has to be for love. The pioneers of contemporary craft - people like Maija Grottel, Lenore Tawney, and Ron Pearson - and the people who continue to make important contributions - Helen Shirk, Dante Marioni, Richard Notkin, and many others - have at least one thing in common. Their subjective experience guides their work. They remain dedicated to their craft because they have an emotional commitment to it. They were and are passionate.

Most writing about art has nothing to say about passion. It's is the kind of thing intellectuals sneer at, like a cheap cinematic effect. Such disdain is consistent with the role of the modern artist as skeptical outsider, fighting the good fight against bourgeois complacency. But it also has to do with the fact that passion is a subjective experience: a feeling, and feelings are easy to ridicule because they are so often trivialized. Think of the way TV advertising depicts some heartwarming family drama, only to sell long-distance phone service or allergy drugs. But even though emotions can be faked and manipulated, genuine feelings are essential to us. We register our lives largely in terms of our emotions: love and affection, anger and disgust, trust and betrayal, and of course, the way we feel about our work. As Csikszentmihalyi says, "Subjective experience is not just one of the dimensions of life, it *is* life itself." Without emotions, we might as well be machines.

Furthermore, passion leads directly to meaning. For those who do not subscribe to given religious or ideological beliefs, a central project in life is the discovery or invention of some kind of narrative that explains one's purpose: that is, meaning. While a detailed discussion of

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[11] Wilson, pages 5 - 6.

the nature of the subject is impossible here, meaning (on a personal level) has several characteristics. To be meaningful, something must be important: it must carry the emotional weight I just discussed. Generally, this emotional investment is configured as a goal: we want to achieve a condition that does not exist at present. Once a goal is established, striving becomes necessary. Meaning demands active involvement. As Csikszentmihalyi says, "People who find their lives meaningful usually have a goal that is challenging enough to take up all their energies, a goal that can give significance to their lives."[12] Otherwise the goal remains something of an empty shell, a "pipe dream".

In other words, the passion comes from exercising innate intelligences and engaging in concentrated work become meaningful. Handwork makes meaning, not just physical things. It offers unalienated labor, a sense of purpose, a community, and an avenue for growth. For those who are not content with the readymade answers that our society offers - being a good consumer; being a good Christian; being a good soldier; or any other prescribed role - handwork opens up a world of meaningful self-actualization, and a path to a life well lived.

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These are some of the subjective aspects of handwork. But these aspects of mind and meaning matter only to makers, to people who get to use their hands. What about the audience for handmade objects? Buyers and users can't get the same pleasures and satisfactions that makers do; their relationship with the object must be different. So, does a handmade object have any special meaning once it leaves the maker's hands, or is it just another indifferent hunk of material culture? Is a handmade object equivalent to your typical mass-produced thing?

With craft, the audience confronts an object, not a person. But being made by hand, the craft object stands only at one degree of separation from a person. In some cases, the fingerprints of the maker are literally impressed on the object, while other cases, evidence of the maker's body survives only as careful workmanship. Regardless, the handmade object is the direct trace of its author. In craft, a person always stands, like a shadow, in close proximity to the thing itself.

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[12] Csikszentmihalyi, page 216. Ther last chapter of Flow is titled "The making of meaning", and describes in much greater detail the conditions necessary for meaning.

This human trace is significant because it's so different from the anonymity of most consumer goods. Think of all that stuff in shopping malls: clothing, appliances, books, home decor, whatever. We swim in a sea of mass-production. Most of them are churned out by the thousands. Some may have been made partly by hand, but any evidence of handwork is usually erased. Other goods are made completely by machine, like your average soda can. Human hands never touch such things until they are taken out of the carton and put on a shelf. As a result, the typical consumable is relentlessly anonymous, detached from its designer and producers. Most people have no clue who or what produced the things they buy, nor do they have any idea how they are made. The means of production are utterly alien.

In contrast, many people recognize the craftsman's shadow-presence. In the United States, craft is marketed and identified with handwork: it's impossible to miss the fact. In addition, the most common venue for craft is the crafts fair - there are thousands of these events every year, and some of the older fairs, like the ones in Ann Arbor or State College, Pennsylvania are astonishingly popular. At these fairs, consumers can actually meet the people who produce the goods: they can attach a face and name to a product, and in some cases can actually see how it's made. Production is no longer alien, but familiar. And, I believe, almost everybody gets it: they understand the connection between person and hand and object.

The handmade object stands, first and foremost, for the person who made it. This may seem unremarkable at first, but consider the trend in our society towards depersonalization and disembodiment. How do you feel when you get one of those automated message menus when you call a business? Don't you wish you could talk to a person, not listen to a machine? And computers: wonderful as they are, the momentum of technology is turning people into passive input devices. Once voice recognition systems become widespread, users won't even have to use their hands to type information: you will be reduced to a speech producer. What about the rest of your body? Against this background, an object that personifies a particular person takes on more value and meaning.

I'll put it this way: handwork communicates. By itself, without any overlay of artistic intent, the first thing handwork communicates is that a skillful person was there. The handmade object stands for a human presence, a human's touch, and a human's care.

Handwork also communicates sincerity. Postmodernism requires that the artists stand at a distance from the artwork, draped in a protective coat of irony. The hot British artist Damien

Hirst specializes in spin-art paintings, along with his famous pickled cows. He has a motorized table, and he pours paint on the rotating square just like you do at amusement parks. What does he really mean? That's anybody's guess - but it's pretty clear that Hirst assumes the requisite ironic distance. In contrast, skilled craft can never be completely tongue-in-cheek: the investment of care in the training and labor precludes a totally ironic pose.

Consider Sharon Church's untitled brooch from 1999: the twig and stem are delicately hand-forged from thick silver rods, and the leaf carefully carved from antler. From a technical point of view, probably the most remarkable part is the budlike form that the leaf emerges from: it is carved from a chunk of silver. This demands real skill, and slow, painstaking work. Such perfection of shape and the uniformity of surface mark cannot be achieved without wholehearted commitment. Sharon Church had to *care*. There is no ironic distance here, no emotional detachment. This is not the attitude of a wage earner, rushing through a job just to maximize her paycheck, nor is it the attitude of a fashionable bad-boy artist who must obscure his motivations . Church's skill inoculates her against cynicism. Her attitude toward her labor is sincere, and there's no hiding the fact - providing, of course, that the observer recognizes the quality of the handwork.

Now, there are some kinds of skilled work that take an experienced eye to recognize, like a solder seam that's clean and free from pits. But interestingly, there are other kinds of skilled work that everybody recognizes. Imagine a hand-cut dovetail joint in a piece of furniture. A good dovetail requires cutting two different boards so that the fingers of the joint mate perfectly: a tight joint won't flex, and so will remain strong for generations. But the visual evidence is of poor work plain to see. A bad layout or inaccurate cutting shows up as gaps in the joint. Gaps in dovetails are a visual analog to poor quality, because a loose joint will be more likely to flex. Any adult can tell that such workmanship is second-rate. It takes no training, and no familiarity with the craft. It seems obvious.

Why? I think that humans, having evolved as tool-makers and users for some 1.5 million years, have an intuitive judgment about certain kinds of workmanship. We can all recognize a snug fit, we can all recognize a good wrapping. Is it coincidence that these criteria are the same that would be applied to a good stone hammer, or a good arrow? I suspect not. In any case, regularity and tightness of fit are criteria one would look for in any functional and durable tool. Careful fabrication of a tool has a direct correlation with it's quality, it's fitness, and how well it will perform.

Handwork has social implications, too. First and foremost, careful handwork is a form of resistance. A life in craft goes against the grain. Contemporary society does not particularly value a life devoted to craft. I don't know anyone who is primarily a maker of objects who has gotten rich... moderately famous, maybe, but not rich. And I never heard of a parent who was excited when their child decided to declare a crafts major in college. Furthermore, handwork suggests that a meaningful life can be constructed without resorting to the latest and fastest of digital technologies. This isn't a modern version of Luddism, but it does suggest that certain kinds of people don't need to be wired to find contentment.

All craft workers have rejected some of the values of the dominant culture. Handwork proposes that the typically American values of bigger, faster, and newer aren't good for everyone: slower and smaller are fine for some. Working with the hands is thus a symbolic protest, a quiet proposal that mainstream values can't be good for everyone. This resistance is not nostalgic. As I suggested before, it's about subjective experience in the present day. It's about quality of life.

Here's a useful way of thinking about handwork: the craft object is a performance, and craft is a theater of skill. Generally, we think of performance as consisting of an audience in the presence of musicians or actors or dancers. But the craftsman performs too: skilled work is "physically and cognitively demanding", highly structured, and full of communicative content. The handmade object is analogous to an audio recording of a singer: just as we can interpret a singer's thoughts and intentions from a record, we can do the same with a pot or a piece of jewelry. In the poorly made dovetail, we can confidently say that the cabinetmaker didn't care too much. It's a poor performance.

A good performance will be a careful one, in which attention and skill is lavished on all parts of the object, whether they are immediately visible or not. In a sense, this standard of craftsmanship stands quite independent of all other standards, including those of art. And this means that a well-crafted object can have little artistic creativity, but still be of very high quality.

Consider something like the walnut highboy made by Kinloch Woodworking of Unionville, Pennsylvania. Kinloch is one of a number of furniture makers near Philadelphia who specializes in high-end replicas. This example is based on a Phillips/Stevenson highboy from the Winterthur collection, and it comes very close to its prototype. I think it is quite extraordinary. The Kinloch woodworkers are fully aware that they are imitating existing prototypes, and they make no bones about it. They usually judge themselves in terms of

fidelity to the original, and the quality of their craftsmanship. Their creativity is confined to problem-solving: how to accomplish the same level of craft with modern materials and techniques; how to design missing elements that would be entirely plausible. In this highboy, the finials and cartouche are not identical the those on the prototype, which were replacements, so they designed their own. Nonetheless, the workmanship is outstanding. It embodies all the best qualities of handwork that I have been talking about.

What about the art question? What does the hand have to do with contemporary art? That's the subject of an entirely different essay, but I'll say this: Art and craft are *not* the same thing. There are radical differences between the two fields, and that any attempt to understand craft by using only the vocabulary and ideas already established in art theory somehow misses the point. I believe my colleagues who speak of craft in the terms of art are getting it wrong, partly. My study of art theory leads me to believe that all that heavy lifting just doesn't get to the heart of craft. Formalism, semiotics, deconstruction, chaos theory, whatever: while these ideas may illuminate a wide range of cultural phenomena, they are inadequate to a comprehensive understanding of craft. In my opinion, to really understand craft, you must consider handwork.

I don't think careful handwork has any necessary connection to art. On the other hand, given the mutability of art in the past century, I don't think *anything* has a necessary connection to art, with one or two exceptions. I accept Arthur Danto's thesis, that art is embodied meaning, and art can be anything at all. Danto doesn't specify what kind of meaning qualifies for the art enterprise, and he implies that all meanings are legitimate. And part my thesis here is that handwork produces meaning as well as objects.

So, to return to my initial question: Why bother to make anything by hand today? Because for those who practice it, and for those who need an antidote to the alienation of modern society, handwork can be meaningful.

Individuals with a certain kind of bodily intelligence will find handwork to be a rewarding form of both labor and expression, and thus find it meaningful. Until the genetic structure of humans change, this will be true. Some people use handwork to enter the "flow" state of intense and satisfying concentration, and thus find it meaningful. Handmade objects embody a human presence against a background of anonymity, and sincerity against a background of cynicism and irony. Handwork symbolizes resistance against the culture of bigger, faster, and right away. And the best handwork is, in itself, a type of good. All of this is meaningful. As

long as people have hands, some will try to use them carefully, attentively, and with passion. The theater of skill will never become obsolete. Count on it.